In re Application of: Millar, Douglas Spencer, et al. Attorney Docket No. 066828-0015

AMENDMENTS TO THE CLAIMS

In the claims:

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Please cancel claims 1-21.

Claims 1-21 (canceled)

Please add the following new claims:

22. (New) A method for altering a characteristic or state of a cell comprising:

treating a first cell type with an agent capable of altering a characteristic or state in a cell, wherein the agent is an extract, lysate, cellular component or mixture thereof derived or obtained from a second cell type having a desired characteristic or state; and

determining the degree of alteration in the treated cell by measuring a methylation signature within the genome of the treated cell, wherein a given methylation signature is indicative of an altered characteristic or state of the treated cell.

- 23. (New) The method according to claim 22 wherein the first cell type is selected from the group consisting of a cell derived from an individual suffering from age-related disabilities, a disease such as cancer, an autoimmune disease, cardiovascular problems such as myocardial infarction or ischemia, stem cell, T cell or monocyte of the immune and hematopoietic system, normal cell, and mixtures thereof.
 - 24. (New) The method according to claim 23 wherein the first cell type is a stem cell.
- 25. (New) The method according to claim 22 wherein the second cell type is any cell type or combination of cell types.
- 26. (New) The method according to claim 25 wherein the second cell type is selected from the group consisting of a cell derived from a healthy individual, stem cell, T cell or monocyte of the immune and hematopoietic system, normal cell, and mixtures thereof.
- 27. (New) The method according claim 25 wherein the first and second cell types are selected from the group consisting of cells of the human haematopoietic system, stem cells, and epithelial cells.

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- 28. (New) The method according claim 27 wherein the second cell type is derived from a normal or healthy individual of a cell type similar to the first cell type.
 - 29. (New) The method according claim 28 wherein the second cell type is a stem cell.
- 30. (New) The method according to claim 22 wherein the first cell type cell and the second cell type cell are of the same cell type from the same species.
- 31. (New) The method according to claim 22 wherein the first cell type and the second cell type are not of the same cell type.
- 32. (New) The method according to claim 22 wherein the first cell type and the second cell type are not of the same species.
- 33. (New) The method according claim 32 wherein the second cell type is an amphibian cell and the first cell type is human or other mammalian cell.
- 34. (New) The method according to claim 22 wherein the first cell type is pre-treated so as to make the cell permeable to macromolecules.
- 35. The method according to claim 34 wherein the cell is pre-treated by electroporation, low temperature thermal shock, or various enzymes such as streptolysin O.
- 36. (New) The method according to claim 35 wherein the pre-treatment renders the cell temporally permeable.
 - 37. (New) The method according to claim 22 further including:
 culturing or growing the treated cell to obtain multiple copies of the treated cell.
- 38. (New) The method according to claim 37 wherein the treated cell is cultured in any suitable media or host under conditions that are suitable for cell growth and division.
- 39. (New) The method according to claim 38 wherein the host is a domestic animal selected from the group consisting of bovine, ovine, equine, poultry, and porcine.

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- 40. (New) The method according to claim 22 wherein the methylation signature is a group of cytosines within a region of the genome that has a characteristic methylation signature which corresponds to a specific cell type.
- 41. (New) The method according claim 22 wherein the methylation signature is determined by the bisulphite modification and subsequent DNA sequence analysis.